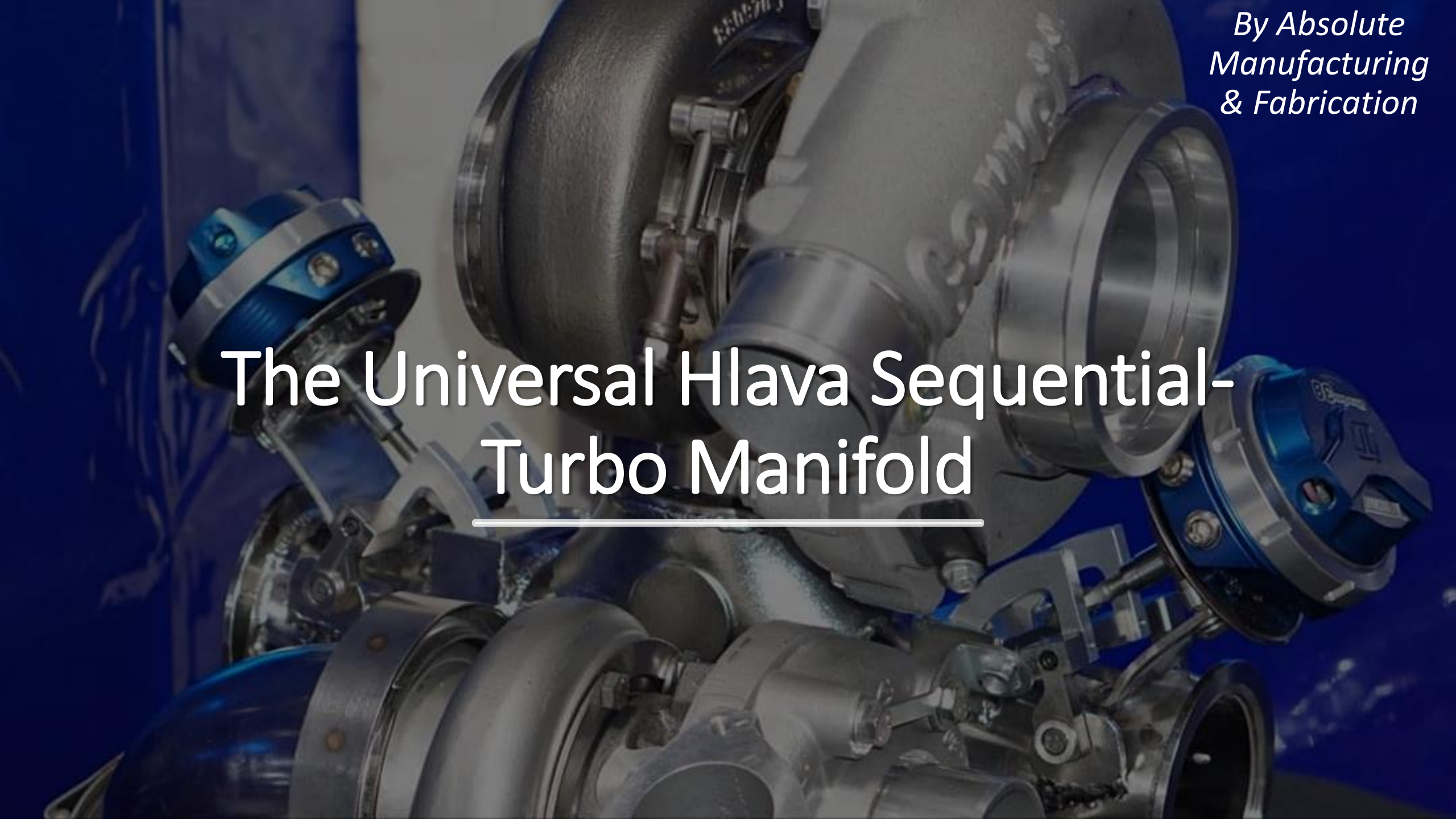


*By Absolute  
Manufacturing  
& Fabrication*

# The Universal Hlava Sequential- Turbo Manifold

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# When it all Started

- First idea for the Sequential-Turbo Manifold was in 2012
- First applicable design was produced in early 2020. Realized it was too large of a design and needed to be smaller in order to make it a universal product.



*Original concept of the HST Manifold*

- Late 2020, a revised concept, significantly smaller and more efficient, was produced.





# All the Benefits. None of the Downfalls.

- The universal Hlava Sequential-Turbo Manifold allows engines to achieve levels of performance like never before with such efficiency and effectiveness.
- Gain a near immediate turbo response from a small turbocharger that builds up pressure in the manifold and reaches a predetermined pressure rating that then opens two valves allowing excess exhaust gas to be directed uninterrupted toward the larger turbocharger bypassing the smaller.
- Providing a seamless transition from the smaller turbocharger with a near instantaneous turbo response to the larger, providing a steady progressive boost pressure throughout the entirety of the RPM band.
- While having the ability to increase fuel economy, lower emissions, and gain overall better performance as the engine will not have work so hard to do what it was designed to do; pump air in, pump air out.



# Turbocharger Application

1. Passenger Vehicles
2. Light Commercial Vehicles (LCV)
3. Heavy Commercial Vehicles (HCV)
4. Marine Vehicles
5. Agriculture Machinery
6. Construction Machinery



A close-up, grayscale photograph of a turbocharger turbine housing. The central focus is the turbine wheel, which has multiple blades radiating from a central hub. The housing is circular with a flange-like structure. The lighting creates strong highlights and shadows, emphasizing the metallic texture and the complex geometry of the component.

# Competition

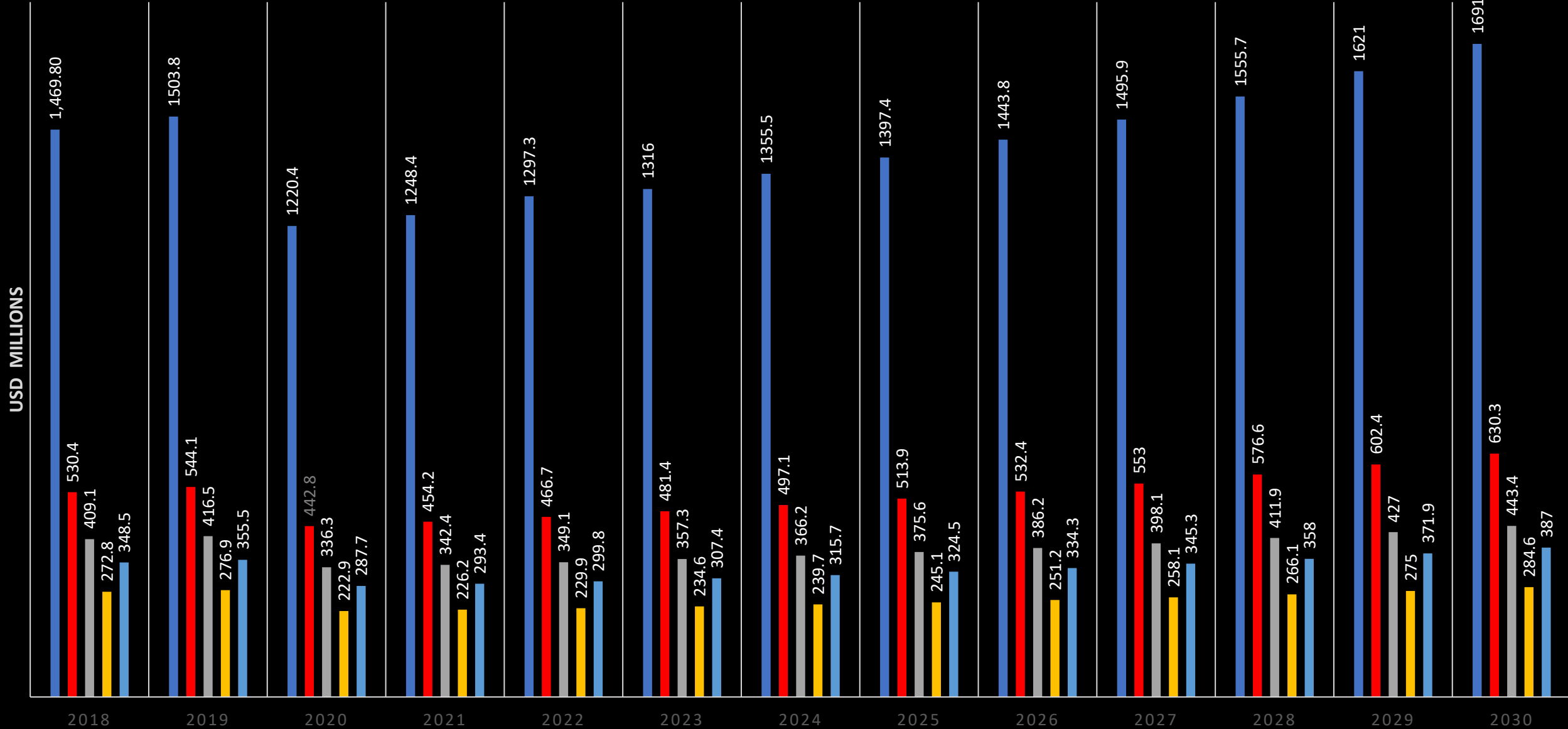
- Variable Geometry Turbochargers (High maintenance cost)
- Single turbo (Lag is likely and limited range of efficiency)
- Twin-turbo (Still very limited range of efficient turbo response)
- Compound Turbo (Creates extreme heat and unresponsive in low RPM)
- Twin-Scroll (Poor high RPM performance)
- New Tech

# Driving the Market

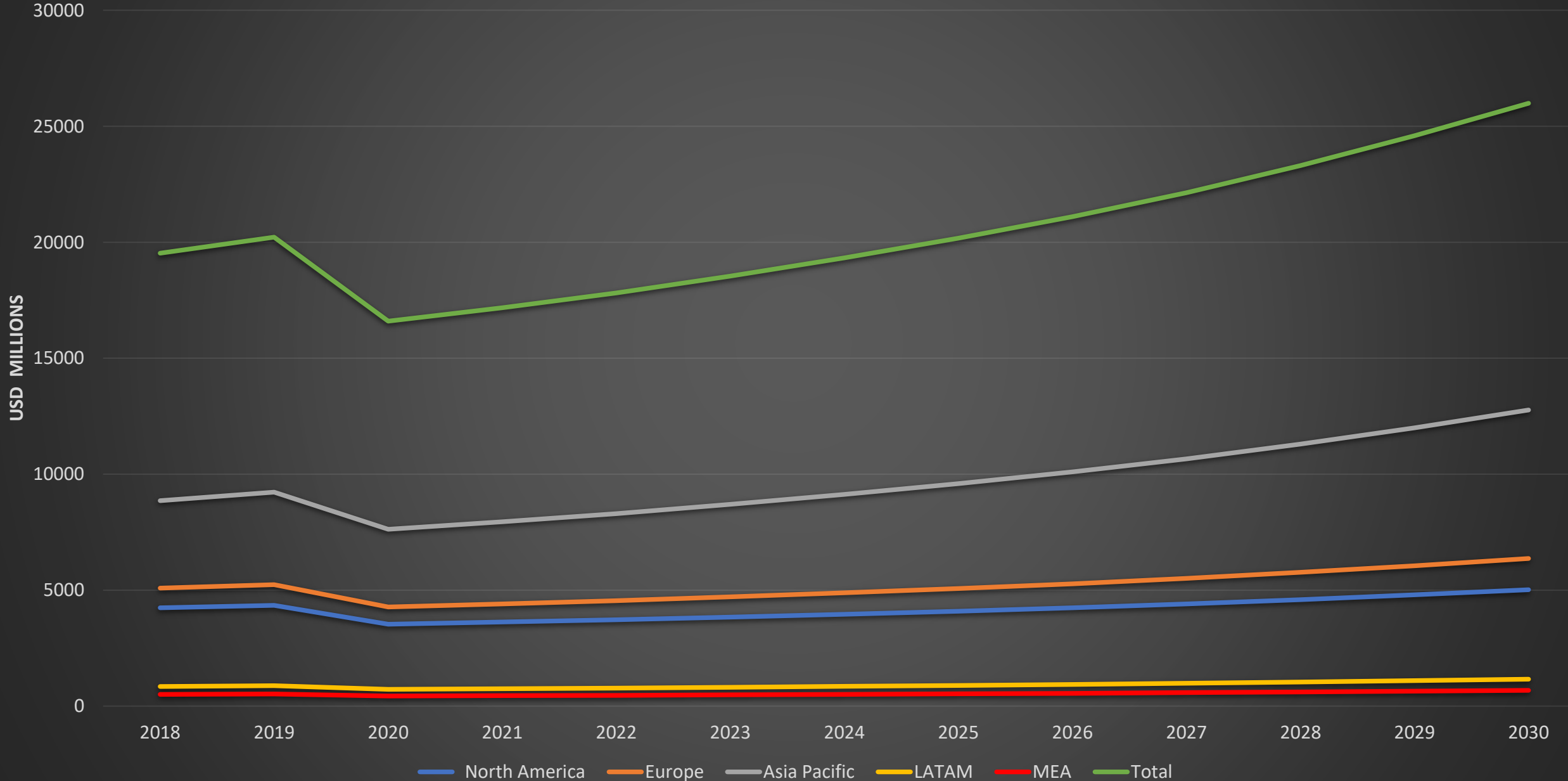
- Emissions
  - E.G. Midwest Alliance For Clean Hydrogen
  - Vehicle Efficiency- More efficiently running engine=less pollutants and cleaner environment
  - Closer to Stoichiometric = Cleaner more efficient burn
- Fuel Economy
  - “Turbochargers can help downsized engines improve fuel economy as much as 20 to 40 percent in gas and diesel engines” – Garrett Motion, June 6, 2019
- Projected Future Implementations
  - Hydrogen Turbocharged Engines. Bills actively approached for research and development of hydrogen turbocharged engines
  - Natural Gas Turbocharged Engines actively researched for possible future usage

# US TURBOCHARGER MARKET PAST/CURRENT/PROJECTED

■ Passenger Vehicles ■ LCV ■ HCV ■ Agricultural Machinery ■ Construction Machinery



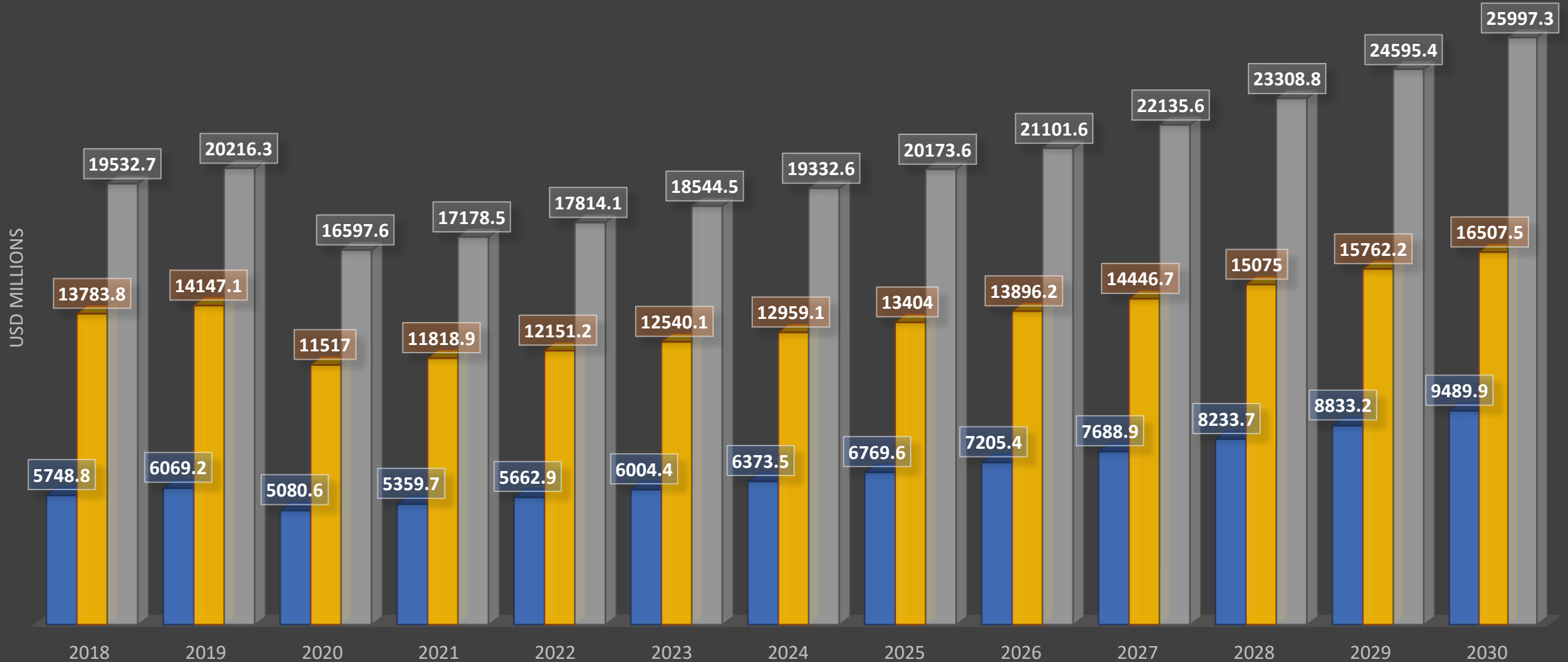
# Turbocharger Market Revenue By Region and Total Past/Current/Projected



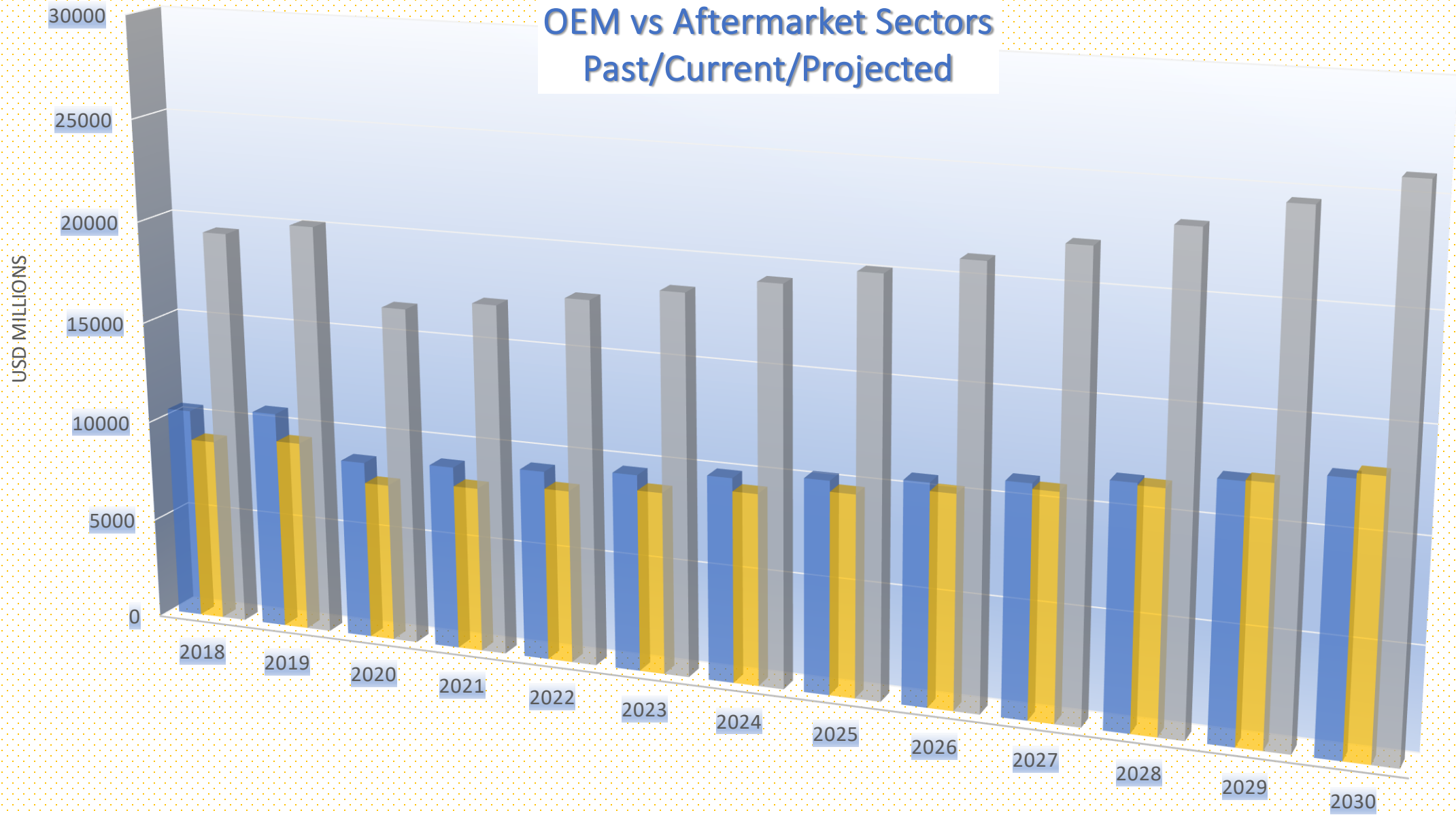


# TURBOCHARGER MARKET BY FUEL TYPE PAST/CURRENT/PROJECTED

■ Gasoline ■ Diesel ■ Total



# OEM vs Aftermarket Sectors Past/Current/Projected

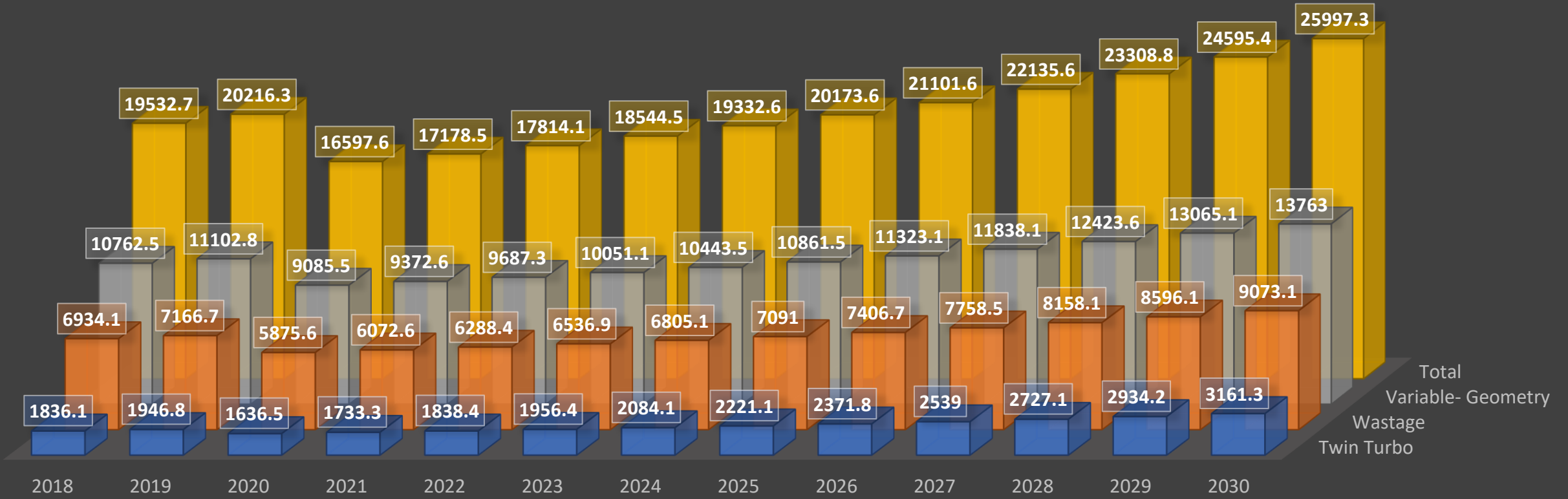


■ OEM ■ Aftermarket ■ Total

# GLOBAL TECHNOLOGY TURBOCHARGING INVESTMENTS PAST/CURRENT/PROJECTED

■ Twin Turbo ■ Wastage ■ Variable- Geometry ■ Total

USD MILLIONS





# What we are doing now

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- Research and Development
  - Dual Valve
  - Single Valve
- Marketing
  - Social media and website optimization
- Begun Manufacturing Process
- Taking Pre-Orders



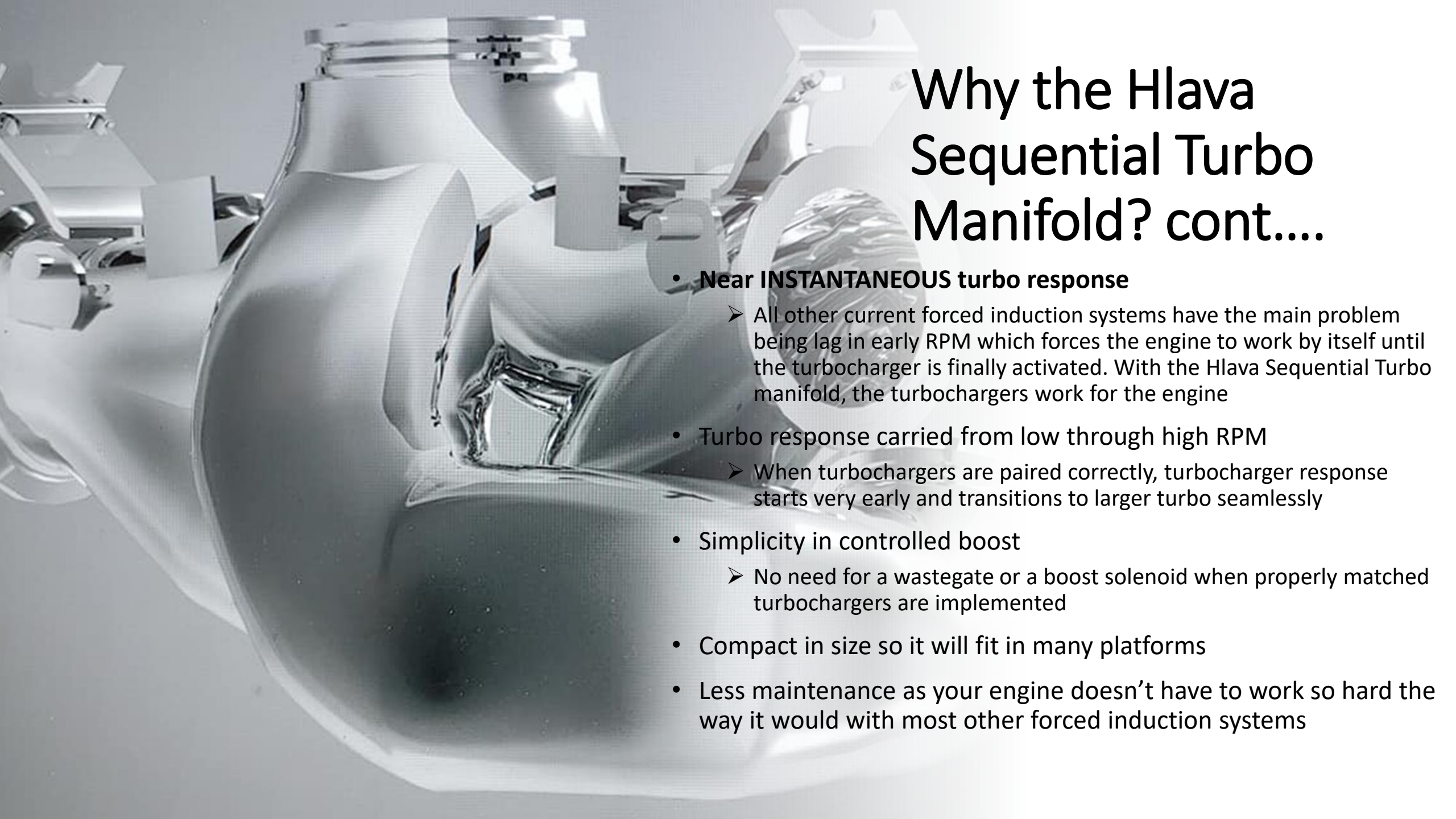
# Why the Hlava Sequential-Turbo Manifold?

- Patent-backed with two models
  - Dual Valve
  - Single Valve
- Ability to be utilized on any Internal Combustion Engine
  - ***Extremely Large Market Opportunity***
- Helps reduce emissions
  - Able to achieve a more complete burn due to forced air delivery from 2 different framed turbochargers
    - Each operate in sequence at an efficient and effective area of their given MAP throughout the RPM band.
  - Eliminates the requirement of a wastegate; allowing all the exhaust gas to travel through the turbine housings providing optimal engine efficiency.
- Increased fuel efficiency
- Assists in overall better engine performance
- The most efficient utilization of “Free” power
  - We consider it “free” power because it uses engine exhaust that otherwise would go out of the wastegate in other forced induction systems or the exhaust



*Close up of valve sealing inside the HST Manifold*





# Why the Hlava Sequential Turbo Manifold? cont....

- **Near INSTANTANEOUS turbo response**
  - All other current forced induction systems have the main problem being lag in early RPM which forces the engine to work by itself until the turbocharger is finally activated. With the Hlava Sequential Turbo manifold, the turbochargers work for the engine
- Turbo response carried from low through high RPM
  - When turbochargers are paired correctly, turbocharger response starts very early and transitions to larger turbo seamlessly
- Simplicity in controlled boost
  - No need for a wastegate or a boost solenoid when properly matched turbochargers are implemented
- Compact in size so it will fit in many platforms
- Less maintenance as your engine doesn't have to work so hard the way it would with most other forced induction systems